TYPICAL SEQUENCE OF COMPONENTS

Minimum Total Points = 16 (11 prompts)

Maximum Total Points = 19 (14 prompts)

(N = necessary components *See standardized prompt and scoring guide All blank data tables are provided for student use)

SCENARIO

Ideally the template starts with the scenario of a novel investigation. The results can be initially presented in a table or as a combination of a table and pictorial. The purpose, the procedure, and the person or people performing the investigation should be clearly stated in the introduction.

Not all investigations will give the information in a table alone. Some investigations will give students pictures of objects to be measured (leaves, toy cars, etc.). Questions will then follow in a typical sequence described below.

	Performance Event COMPONENT	GLEs that may be addressed	NOTES	NO of ITEM PROMPTS	TOTAL POINT RANGE
N	Measure (using manipulatives when appropriate)	 7.1.B5a: Make qualitative observations using the five senses 7.1.B5b: Determine the appropriate tools and techniques to collect data 7.1.B5c: Use a variety of tools and equipment to gather data 7.1.B5d: Measure length to the nearest centimeter, mass to the nearest gram, volume to the nearest milliliter, temperature to the nearest degree Celsius, weight to the nearest Newton 7.1.B5f: Judge whether measurements and computation of quantities are reasonable 	Questions may ask students to determine the proper tools to perform certain investigations	1	1-2
	Sort and count (using manipulatives when appropriate)	 7.1.B5a: Make qualitative observations using the five senses 7.1.B5b: Determine the appropriate tools and techniques to collect data 7.1.B5e: Compare amounts/measurements 7.1.B5f: Judge whether measurements and computation of quantities are reasonable 		1	1-2

	Performance Event COMPONENT	GLEs that may be addressed	NOTES	NO of ITEM PROMPTS	TOTAL POINT RANGE
N	Record data in data table	7.1.E5a : Communicate the procedures and results of investigations and explanations through:data tables	This may follow another investigation located later in the template.	1	2
N	Questions about data displayed in data table	 7.1.B5e: Compare amounts/measurements 7.1.B5f: Judge whether measurements and computation of quantities are reasonable 7.1.C5a: Use quantitative and qualitative data as support for reasonable explanations 7.1.C5b: Use data as support for observed patterns and relationships, and to make predictions to be tested 	Students should be able to answer questions using data from the prompt or data table.	1-2	1-2 (1/item)
N *	Complete bar/single line graph (title given, axes labeled with general description of independent and dependent variables)	7.1.E5a : Communicate the procedures and results of investigations and explanations throughgraphs		1	4
N	Questions about data displayed in bar/single line graph	 7.1.B5e: Compare amounts/measurements 7.1.C5a: Use quantitative and qualitative data as support for reasonable explanations 7.1.C5b: Use data as support for observed patterns and relationships, and to make predictions to be tested 7.1.D5a: Evaluate the reasonableness of an explanation 7.1.D5b: Analyze whether evidence and scientific principles support proposed explanations 	Students should be able to answer the questions using either the table <u>or</u> the graph.	1-2	1-2 (1/item)
N	Questions about experimental design	 7.1.A5b: Recognize the characteristics of a fair and unbiased test 7.1.A5c: Conduct a fair test to answer a question 7.1.A5d: Make suggestions for reasonable improvements or extensions of a fair test 	(Questions may be asked after the new scenario)	1-2	1-2 (1/item)

New scenario (same theme) with additional data (may be in form of new chart, graph, or illustration)

	Performance Event COMPONENT	GLEs that may be addressed	NOTES	NO of ITEM PROMPTS	TOTAL POINT RANGE
N	Questions on data provided in prompt (not previously asked elsewhere in)	 7.1.B5e: Compare amounts/measurements 7.1.B5f: Judge whether measurements and computation of quantities are reasonable 7.1.C5a: Use quantitative and qualitative data as support for reasonable explanations 7.1.C5b: Use data as support for observed patterns and relationships, and to make predictions to be tested 7.1.D5a: Evaluate the reasonableness of an explanation 7.1.D5b: Analyze whether evidence and scientific principles support proposed explanations 		1-2	1-2 (1/item)
N	Write a testable question related to the new scenario	71A5a : Formulate testable questions		1	1
N	Write an explanation (hypothesis)	71A5a : Formulate testable explanations (hypotheses)		1	1
N	Questions about experimental design (not previously asked)	 7.1.A5b: Recognize the characteristics of a fair and unbiased test 7.1.A5c: Conduct a fair test to answer a question 7.1.A5d: Make suggestions for reasonable improvements or extensions of a fair test 		1-2	1-2 (1/item)

Generic Scoring Guide for Bar or Single Line Graphs, Grade 5

(10x10 grid provided with title given, axes labeled with general description of independent and dependent variables, with units if appropriate, spaces/lines provided for category labels)

Four Total Points:

First key element:

Bar graph: All categories to be graphed correctly labeled within bar spaces along horizontal graph

OR

Single-line graph: An appropriate number scale labeled along horizontal axis:

- numbers written on grid lines,
- numbers allow for plotting of all data,
- consistently scaled

Second key element:

All graphs: An appropriate number scale along vertical axis:

- numbers written on grid lines,
- numbers that allow all data to be plotted,
- consistently scaled

Third key element:

Bar graph: At least four bars correctly drawn (top line of each bar is well-defined)

Single-line graph: At least four points correctly plotted and connected by line

Fourth key element:

Bar graph: All five bars are correctly drawn (top line of each bar is well-defined)

Single-line graph: All five points correctly plotted and connected by line

Prompt reads:

Complete the <u>bar</u> graph below, using the information from the data table.

Be sure to do the following:

- Finish labeling both axes with categories or a number scale.
- Draw bars to represent the data, but do not color or shade inside the bars.

-or-

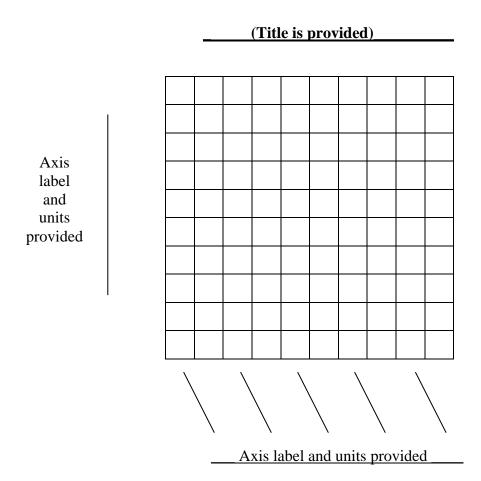
Complete a single line graph below, using the information from the data table.

Be sure to finish labeling both axes with a number scale.

Complete the <u>bar</u> graph below using the information from the data table on page _____.

Be sure to do the following:

- Finish labeling both axes with categories or a number scale.
- Draw bars to represent the data, but do not color or shade inside the bars.



Complete a <u>single line</u> graph below using the information from the data table on page _____. Be sure to finish labeling both axes with a number scale.

Axis label and units provided

Axis label and units provided